

REMARKS

Claims 1, 2, 3, 4, 7 and 10 are amended herein. Claims 1-12 remain pending in the application.

Objection of Claim 1

Claim 1 is objected to as claiming an alleged optional step of “adapted to”. The Applicants respectfully disagree.

The phrase “adapted to” is a positive recitation within the claim that **IS NOT** an optional step performed by either a claimed bandpass filter or an OFDM frame synchronizing correlator. There are no words indicating optional characteristics of the claimed elements such as “may” or “optionally perform”. An apparatus that is adapted to perform a function performs that function.

The Applicants respectfully request the objection be withdrawn.

Claims 1, 2 and 5-12 over Lee in view of Wynn and AAPA

In the Office Action, claims 1, 2 and 5-12 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Lee et al., U.S. Patent No. 6,341,140 (“Lee”) in view of Wynn, U.S. Patent No. 6,313,738 (“Wynn”), and further in view of Applicant’s Admitted Prior Art (“AAPA”). The Applicants respectfully traverse the rejection.

The Applicant respectfully suggest that the need to combine as many as three (3) separate patents to allegedly arrive at the presently claimed invention is evidence of the non-obviousness of the present invention.

Claims 1, 2 and 5-12 recite, *inter alia*, filtering out a digital portion of a signal corresponding to at least one digital channel from a received OFDM signal for frame synchronization.

Lee appears to teach a code synchronization apparatus in a multi-carrier direct sequence spread spectrum communication system (Abstract). A stabilized code synchronization is obtained by adjusting the symbol combining gain and the symbol integration period adaptively to the channel situation (Lee, Abstract; col. 3, line 44 – col. 4, line 34). The code synchronization apparatus utilizes bandpass filters and non-coherent correlators for each channel in a

spread spectrum reception (Lee, Fig. 1; col. 3, line 24 – col. 4, line 34). The received signals are input to the bandpass filters in which the center frequency is positioned at the corresponding carrier frequency (Lee, col. 3, lines 27-30). The bandwidth of the bandpass filters is set to the range to pass only the bandwidth of each carrier so as to detect the strength of the signal received at each frequency (Lee, col. 3, lines 30-34).

The Office Action relies on Wynn and AAPA to allegedly make up for the deficiencies in Lee to arrive at the claimed invention. The Applicants respectfully disagree.

Wynn appears to teach a power line adaptive noise cancellation system that receives noise signals from house power lines and adaptively cancels them (Abstract). The input signals and the noise signals are bandpassed filtered and demodulated by a local oscillator to generate baseband signals for both input signal and noise signals (Wynn, Abstract). The noise cancellation system is applied to power line communication system utilizing frequency division multiplexing (FDM) (Wynn, col. 2, line 65 – col. 3, line 6).

AAPA teaches a conventional technique for ‘marking’ the beginning point of an OFDM data frame called “prefix extension” or “cyclic extension”. Prefix extension relates to the cyclical extension of a number of bits, copied either from the end of the data frame and/or from the beginning of the data frame, and adding the same to the opposite end of the data frame. This technique provides two sets of repeating bit patterns on either end of a 512 bit data frame signal.

Lee teaches a plurality of bandpass filters to separate each center frequency from a plurality of received frequencies. Separating frequencies into distinct frequencies is NOT filtering out a digital portion of a signal corresponding to at least one digital channel from a received OFDM signal for frame synchronization, as claimed by claims 1, 2 and 5-12.

Wynn teaches noise cancellation utilizing FDM. Wynn fail to teach either frame synchronization or OFDM, much less filtering out a digital portion of a signal corresponding to at least one digital channel from a received OFDM signal for frame synchronization, as claimed by claims 1, 2 and 5-12.

AAPA teaches prefix extension. Prefix extension is NOT filtering out a digital portion of a signal, much less filtering out a digital portion of a signal corresponding to at least one digital channel from a received OFDM signal for frame synchronization, as claimed by claims 1, 2 and 5-12.

Neither Lee, Wynn nor AAPA, either alone or in combination, disclose, teach or suggest filtering out a digital portion of a signal corresponding to at least one digital channel from a received OFDM signal for frame synchronization, as claimed by claims 1, 2 and 5-12.

Accordingly, for at least all the above reasons, claims 1, 2 and 5-12 are patentable over the prior art of record. It is therefore respectfully requested that the rejection be withdrawn.

Claims 3 and 4 over Lee in view of Wynn, AAPA and Hunsinger

In the Office Action, claims 3 and 4 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Lee in view of Wynn and AAPA, and further in view of Hunsinger et al., U.S. Patent No. 5,745,525 (“Hunsinger”). The Applicants respectfully traverse the rejection.

The Applicant respectfully suggest that the need to combine as many as four (4) separate patents to allegedly arrive at the presently claimed invention is evidence of the non-obviousness of the present invention.

Claims 3 and 4 are dependent on claim 1, and are allowable for at least the same reasons as claim 1.

Claims 3 and 4 recite, *inter alia*, . filtering out a digital portion of a signal corresponding to at least one digital channel from a received OFDM signal for frame synchronization.

As discussed above, neither Lee, Wynn nor AAPA, either alone or in combination, disclose, teach or suggest filtering out a digital portion of a signal corresponding to at least one digital channel from a received OFDM signal for frame synchronization, as claimed by claims 3 and 4.

The Office Action relies on Hunsinger to allegedly make up for the deficiencies in Lee, Wynn and AAPA to arrive at the claimed invention. The Applicants respectfully disagree.

Hunsinger appears to teach a system and method for transmitting digital information (Abstract). An analog FM signal is centrally located between two adjacent sideband frequency digital signals (Hunsinger, Fig. 19; col. 16, line 16 – col. 17, line 9).

Hunsinger fails to teach any type of frame synchronization, much less filtering out a digital portion of a signal corresponding to at least one digital channel from a received OFDM signal for frame synchronization, as claimed by claims 3 and 4.

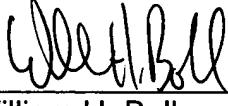
Neither Lee, Wynn, AAPA nor Hunsinger, either alone or in combination, disclose, teach or suggest filtering out a digital portion of a signal corresponding to at least one digital channel from a received OFDM signal for frame synchronization, as claimed by claims 3 and 4.

Accordingly, for at least all the above reasons, claims 1, 2 and 5-12 are patentable over the prior art of record. It is therefore respectfully requested that the rejection be withdrawn.

Conclusion

All objections and rejections having been addressed, it is respectfully submitted that the subject application is in condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,



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